Claims:

1. A safety valve control system for controlling a safety valve, comprising:

a remotely operable control assembly;

a first transducer in communication with the control assembly, wherein the first transducer is operable to measure a physical property and communicate a signal to the control assembly corresponding to the measured physical property;

a valve assembly in communication with the control assembly;

a pump assembly in communication with the control assembly; and

a fluid reservoir in communication with the pump assembly, the valve assembly, and the safety valve, wherein the control assembly is operable to actuate the pump assembly to supply fluid from the fluid reservoir to the safety valve to actuate the safety valve to a first operating position, and wherein the control assembly is operable to actuate the valve assembly to return fluid from the safety valve to the fluid reservoir to actuate the safety valve to a second operating position.

2. The system of claim 1, further comprising a housing, wherein the control, valve, and pump assemblies and the fluid reservoir are disposed in the housing.

3. The system of claim 2, wherein the housing is coupled to an exterior of the safety valve.

4. The system of claim 1, further comprising a computer system in communication with the control assembly.

5. The system of claim 4, wherein the control assembly is operable to communicate a signal to the computer system corresponding to the physical property.

6. The system of claim 4, wherein the control assembly is operable to actuate the valve assembly to return fluid from the safety valve based on a comparison of the measured physical property to a pre-set condition programmed in the control assembly.

7. The system of claim 6, wherein the control system is remotely programmable via the computer system to remotely modify the pre-set condition.

8. The system of claim 6, wherein the measured physical property is a pressure measurement, wherein the pre-set condition is a pressure range, and wherein the control assembly is operable to compare whether the pressure measurement is within the pressure range.

9. The system of claim 7, wherein the control assembly is operable to automatically actuate the valve assembly to return fluid from the safety valve when the pressure measurement is outside of the pressure range.

10. The system of claim 1, further comprising a solar-powered power source for supplying power to at least one of the control and pump assemblies.

11. The system of claim 1, wherein the physical property includes at least one of pressure, flow rate, temperature, volume, material, magnetic field, length, location, emission, electrical charge, electrical current, and electrical potential, and wherein the fluid from the fluid reservoir includes a pneumatic fluid or a hydraulic fluid.

12. A method for controlling a safety valve, comprising:

providing a remotely operable control system that is in communication with the safety valve;

opening the safety valve by supplying fluid from the control system to the safety valve;

maintaining the safety valve in a first operating position while sensing a physical property and communicating a signal corresponding to the sensed physical property to the control system; and

automatically actuating the safety valve to a second operating position by returning the fluid from the safety valve to the control system in response to a

comparison of the sensed physical property to a pre-set condition.

13. The method of claim 12, further comprising monitoring the measured physical property at a location remote from the control system and the safety valve.

14. The method of claim 12, further comprising verifying an operating condition of the safety valve by monitoring the measured physical property.

15. The method of claim 12, further comprising verifying an operating condition of the control system by monitoring the measured physical property.

16. The method of claim 12, further comprising sending a signal to the control assembly to modify the pre-set condition via a computer system.

17. The method of claim 12, further comprising sending an signal from the control system a computer system indicating that the safety valve is in a closed position.

18. The method of claim 12, further comprising producing an alarm that the safety valve is in a closed position.

19. The method of claim 12, further comprising producing power using a solar panel assembly to power the control system.

20. The method of claim 12, wherein the fluid is hydraulic fluid and the safety valve is a pneumatic valve.

21. The method of claim 12, wherein the physical property includes at least one of pressure, flow rate, temperature, volume, material, magnetic field, length, location, emission, electrical charge, electrical current, and electrical potential, and wherein the fluid supplied to the safety valve includes a pneumatic fluid or a hydraulic fluid.

22. A safety valve control system for controlling a safety valve, comprising:

a remotely operable control assembly;

a first transducer in communication with the control assembly, wherein the first transducer is operable to measure a physical property and communicate a signal to the control assembly corresponding to the measured physical property; and

a valve assembly in communication with the control assembly, wherein the control assembly controls the valve assembly to thereby control fluid flow to the safety valve to actuate the safety valve into a first operating position, and wherein the control assembly controls the valve assembly to thereby control fluid flow from the safety valve to actuate the safety valve into a second operating position based on the measured physical property.

23. The system of claim 22, further comprising a pump assembly in communication with the control assembly, wherein the control assembly controls operation of the pump assembly to supply an operating fluid to the safety valve.

24. The system of claim 23, further comprising a fluid reservoir in communication with the pump assembly for storing the operating fluid supplied to the safety valve.

25. The system of claim 23, wherein the operating fluid includes a pneumatic fluid or a hydraulic fluid.

26. The system of claim 23, wherein the first operating position is an open position, and wherein the second operating position is a closed position.

27. The system of claim 1, wherein the first operating position is an open position, and wherein the second operating position is a closed position.

28. The method of claim 12, wherein the first operating position is an open position, and wherein the second operating position is a closed position.

Claims:

1. A safety valve control system for controlling a safety valve, comprising:

a remotely operable control assembly;

a first transducer in communication with the control assembly, wherein the first transducer is operable to measure a physical property and communicate a signal to the control assembly corresponding to the measured physical property;

a valve assembly in communication with the control assembly;

a pump assembly in communication with the control assembly; and

a fluid reservoir in communication with the pump assembly, the valve assembly, and the safety valve, wherein the control assembly is operable to actuate the pump assembly to supply fluid from the fluid reservoir via a first fluid line to the safety valve to actuate the safety valve to a first operating position, and wherein the control assembly is operable to actuate the valve assembly to return fluid from the safety valve to the fluid reservoir via a second fluid line to actuate the safety valve to a second operating position.

2. The system of claim 1, further comprising a housing, wherein the control, valve, and pump assemblies and the fluid reservoir are disposed in the housing.

3. The system of claim 2, wherein the housing is coupled to an exterior of the safety valve.

4. The system of claim 1, further comprising a computer system in communication with the control assembly.

5. The system of claim 4, wherein the control assembly is operable to communicate a signal to the computer system corresponding to the physical property.

6. The system of claim 4, wherein the control assembly is operable to actuate the valve assembly to return fluid from the safety valve based on a comparison of the measured physical property to a pre-set condition programmed in the control assembly.

7. The system of claim 6, wherein the control system is remotely programmable via the computer system to remotely modify the pre-set condition.

8. The system of claim 6, wherein the measured physical property is a pressure measurement, wherein the pre-set condition is a pressure range, and wherein the control assembly is operable to compare whether the pressure measurement is within the pressure range.

9. The system of claim 8, wherein the control assembly is operable to actuate the valve assembly to return fluid from the safety valve when the pressure measurement is outside of the pressure range.

10. The system of claim 1, further comprising a solar-powered power source for supplying power to at least one of the control and pump assemblies.

11. The system of claim 1, wherein the physical property includes at least one of pressure, flow rate, temperature, volume, material, magnetic field, length, location, emission, electrical charge, electrical current, and electrical potential, and wherein the fluid from the fluid reservoir includes a pneumatic fluid or a hydraulic fluid.

12. A method for controlling a safety valve, comprising:

providing a remotely operable control system that is in communication with the safety valve;

opening the safety valve by supplying fluid from the control system via a first fluid line to the safety valve;

maintaining the safety valve in a first operating position while sensing a physical property and communicating a signal corresponding to the sensed physical property to the control system; and

actuating the safety valve to a second operating position by returning the fluid from the safety valve to the control system via a second fluid line in response to a comparison of the sensed physical property to a pre-set condition.

13. The method of claim 12, further comprising monitoring the measured physical property at a location remote from the control system and the safety valve.

14. The method of claim 12, further comprising verifying an operating condition of the safety valve by monitoring the measured physical property.

15. The method of claim 12, further comprising verifying an operating condition of the control system by monitoring the measured physical property.

16. The method of claim 12, further comprising sending a signal to the control assembly to modify the pre-set condition via a computer system.

17. The method of claim 12, further comprising sending an signal from the control system a computer system indicating that the safety valve is in a closed position.

18. The method of claim 12, further comprising producing an alarm that the safety valve is in a closed position.

19. The method of claim 12, further comprising producing power using a solar panel assembly to power the control system.

20. The method of claim 12, further comprising supplying hydraulic fluid to the safety valve, the safety valve being a pneumatic valve.

21. The method of claim 12, wherein the physical property includes at least one of pressure, flow rate, temperature, volume, material, magnetic field, length, location, emission, electrical charge, electrical current, and electrical potential, and wherein the fluid supplied to the safety valve includes a pneumatic fluid or a hydraulic fluid.

22. A safety valve control system for controlling a safety valve, comprising:

a remotely operable control assembly;

a first transducer in communication with the control assembly, wherein the first transducer is operable to measure a physical property and communicate a signal to the control assembly corresponding to the measured physical property; and

a valve assembly in communication with the control assembly, wherein the control assembly controls the valve assembly to thereby control fluid flow via a first fluid line to the safety valve to actuate the safety valve into a first operating position, and wherein the control assembly controls the valve assembly to thereby control fluid flow via a second fluid line from the safety valve to actuate the safety valve into a second operating position based on the measured physical property.

23. The system of claim 29, further comprising a pump assembly in communication with the control assembly, wherein the control assembly controls operation of the pump assembly to supply an operating fluid to the safety valve.

24. The system of claim 30, further comprising a fluid reservoir in communication with the pump assembly for storing the operating fluid supplied to the safety valve.

25. The system of claim 30, wherein the operating fluid includes a pneumatic fluid or a hydraulic fluid.

26. The system of claim 30, wherein the first operating position is an open position, and wherein the second operating position is a closed position.

27. The system of claim 1, wherein the first operating position is an open position, and wherein the second operating position is a closed position.

28. The method of claim 12, wherein the first operating position is an open position, and wherein the second operating position is a closed position.